

March 2013

# **CODESYS V3.5 Service Pack 3 Features & Improvements**

**1**

## Engineering



Engineering

**2**

## Motion + CNC



Motion + CNC

**3**

## Visualization



Visualization

**4**

## Fieldbus



Fieldbus



# Engineering: Overview

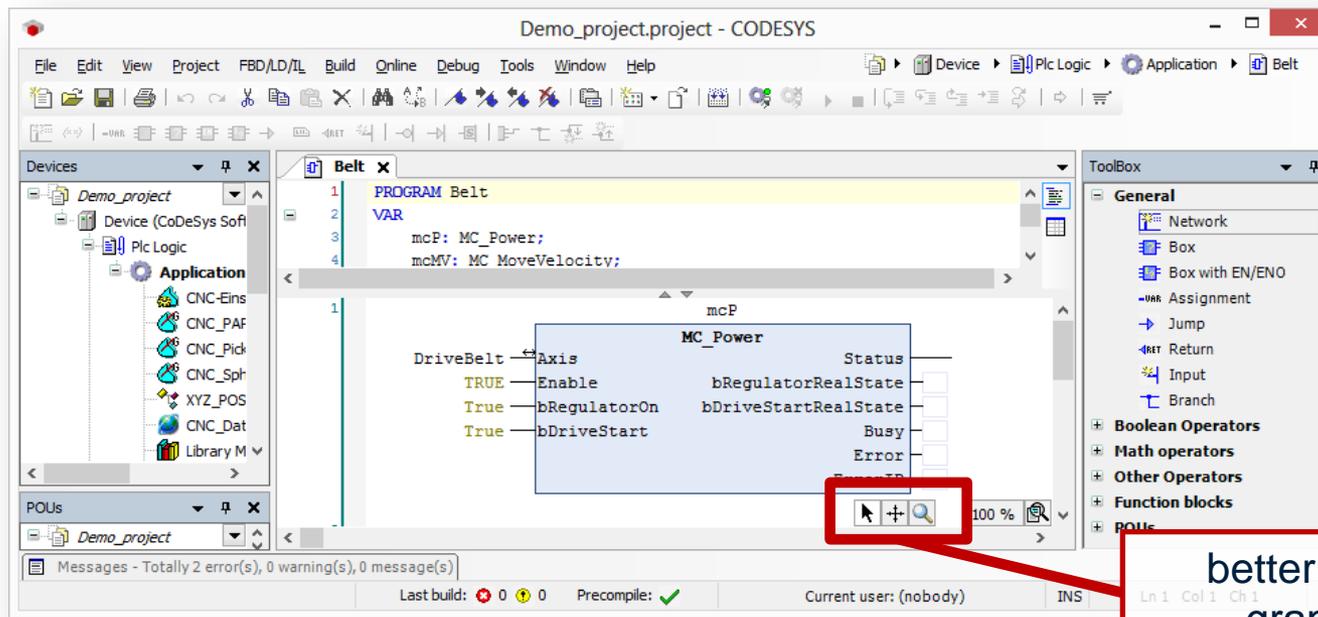


Engineering

- Usability Improvements
- Improved CFC editor
- Test Manager
- Chinese identifiers for Flow Control / Online Change / Compiler
- Static Analysis Light
- Trace
- CODESYS Application Composer: Diagnosis Generator

## Graphical editors

- Better overview
-  As before: highlight, select
-  Panning function: Moving the worksheet
-  Magnifier function: Overview with quick zoom on subarea

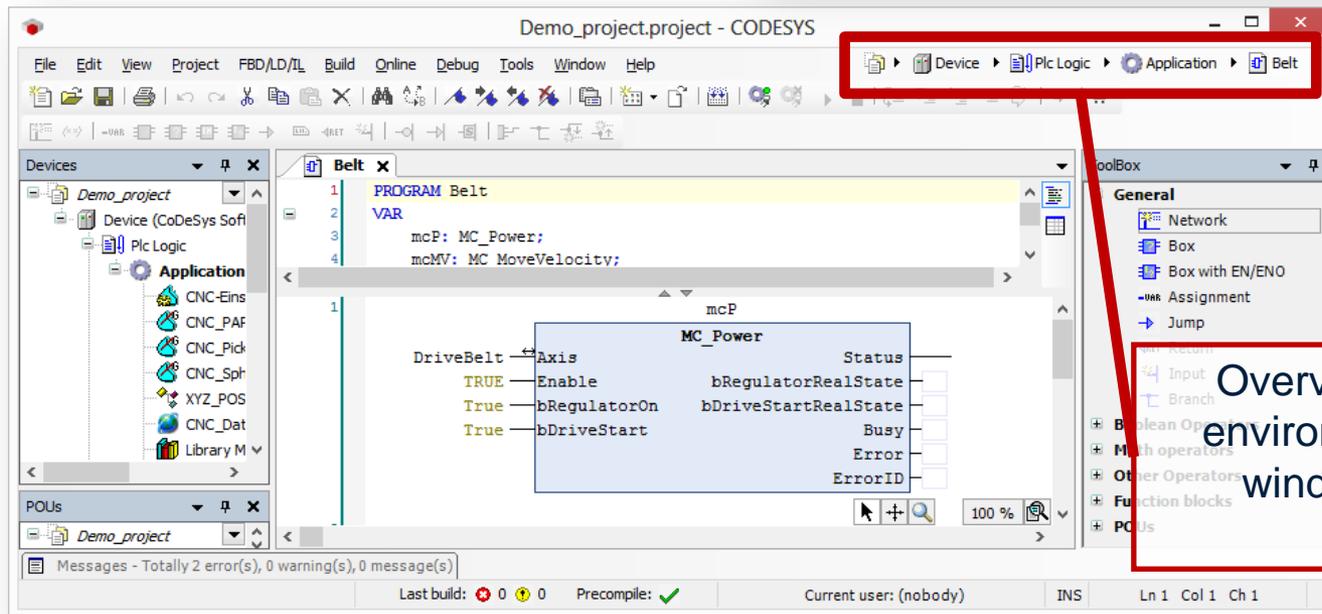
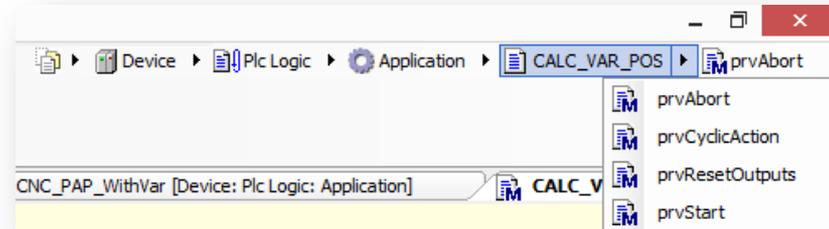


better overview in all  
graphical editors

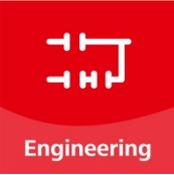


## Graphical editors

- Breadcrumb navigation

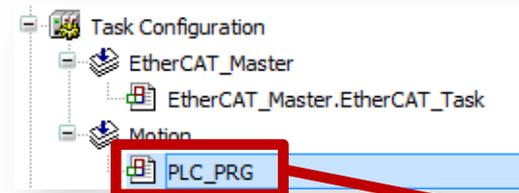


Overview on the project environment – „Devices“-window may become redundant



## Drag & Drop

- PRGs into the task configuration
- Variables into the watch list



PRG per Drag & Drop into a task

Variables per Drag & Drop from the declaration and code part into the watch list

UC\_Demo.project\* - CODESYS (PRERELEASE VERSION - NOT FOR RESALE!)

File Edit View Project FBD/LD/IL Build Online Debug Tools Window Help

PLCWinNT [connected] (CODESYS Control Win V3)

PLC Logic

Devices

UC\_Demo

PLCWinNT [connected] (CODESYS Control Win V3)

Plc Logic

KOP\_EXAMPLE

PLCWinNT.Bspdt.KOP\_EXAMPLE

Schalter1 Schalter3 Schalter4 Schalter6 Lampe1

Schalter2 Schalter5

Schalter14 Schalter15 timer

ST\_EXAMPLE

PLCWinNT.Bspdt.ST\_EXAMPLE

```

1 run_string := 'Start';
2 IF NOT run_string THEN
3   RETURN;
4 END_IF;
5 run_string := 'Stop';
6
7 rot := rot + offset;
8
9 IF (yVal < 250) THEN
    
```

Expression	Type	Value	Prepared value	Address	Cor
PLCWinNT.Bspdt.KOP_EXAMPLE.Schalter1	BOOL	FALSE			
PLCWinNT.Bspdt.ST_EXAMPLE.run_string	STRING(20)	'Start'			

Watch 1

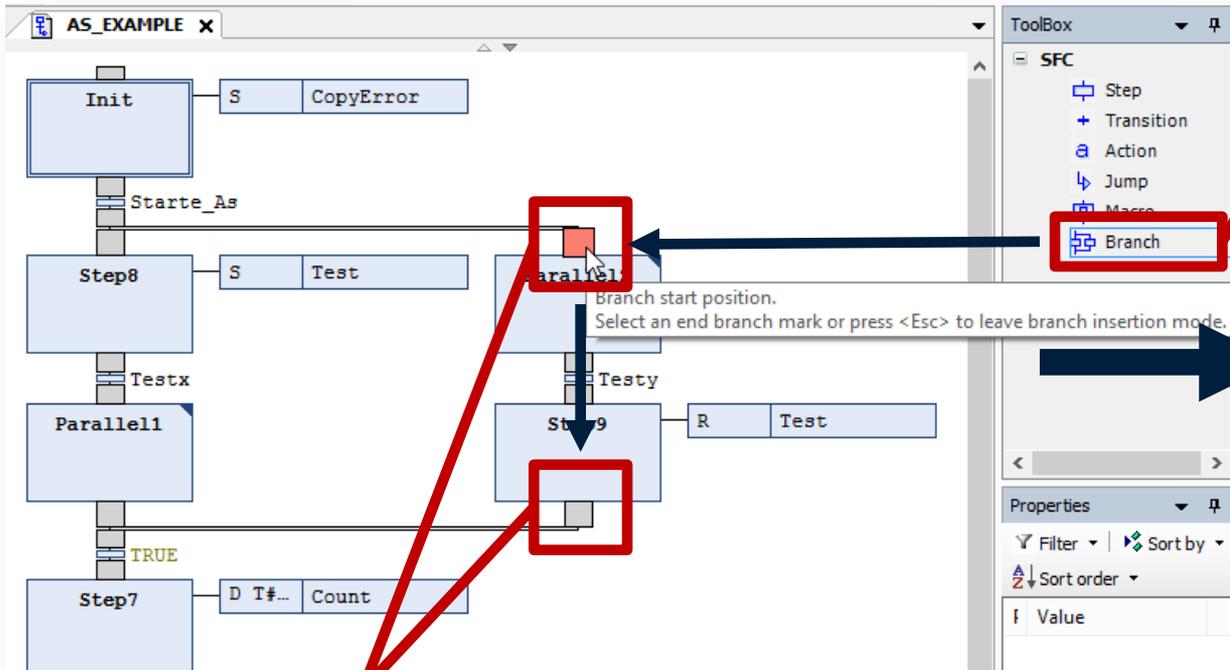
Breakpoints

Last build: 0 1 Precompile: RUN Program loaded Program unchanged Current user: (nobody)

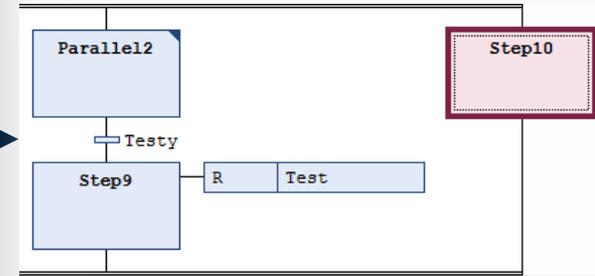


## Drag & Drop

- In SFC



Add SFC elements per Drag & Drop

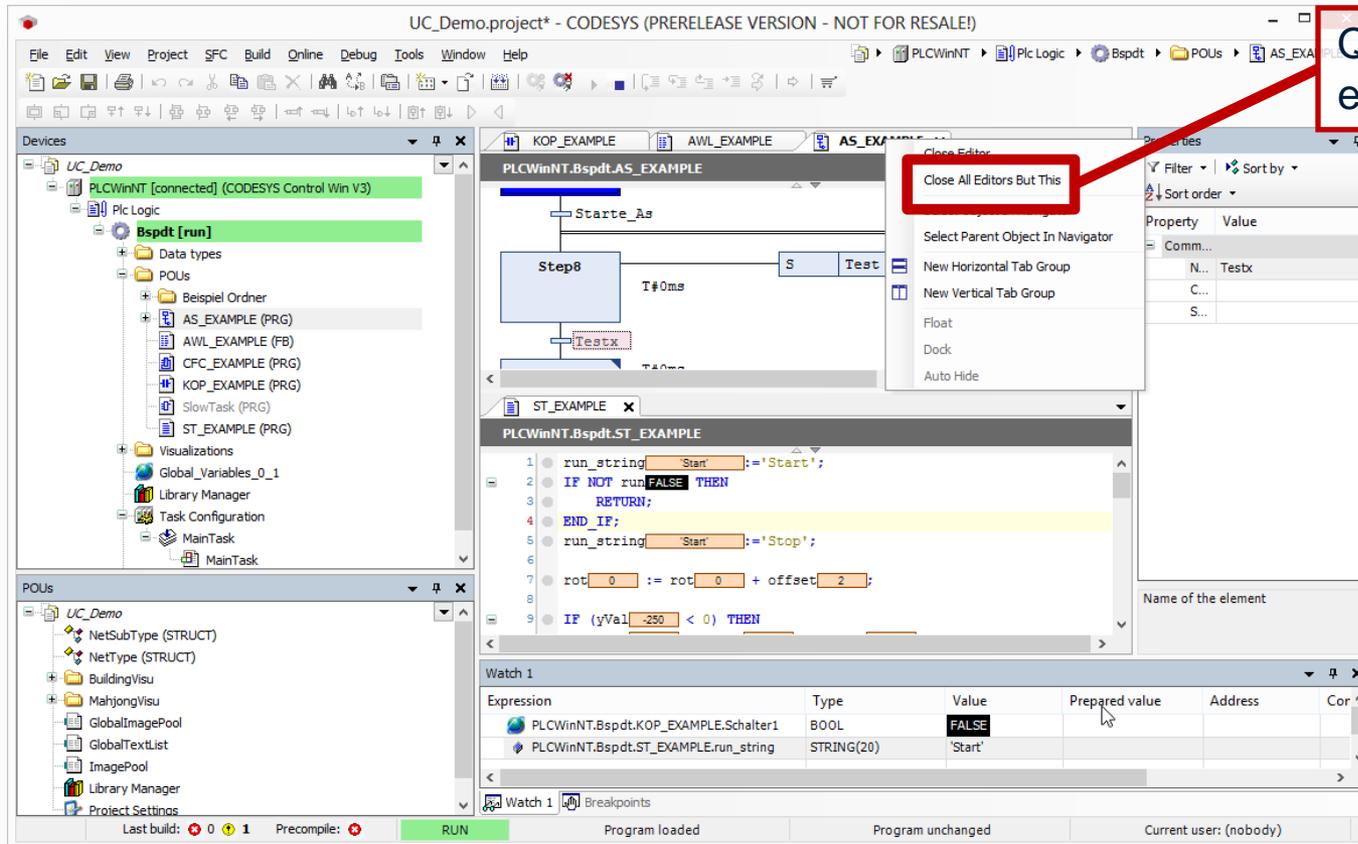


Tip: Branch can include several steps

## Simplification

- „Close All Editors But This“

Quick closing of editors not in use



The screenshot shows the CODESYS V3.5 SP3 interface with the following components:

- Project Tree (Left):** Shows a project named 'UC\_Demo' with a 'Bspdt [run]' task and various sub-tasks like 'AS\_EXAMPLE (PRG)', 'AWL\_EXAMPLE (FB)', etc.
- Main Editor (Center):** Displays a ladder logic diagram for 'Step8' and a variable declaration editor for 'ST\_EXAMPLE' with the following code:
 

```

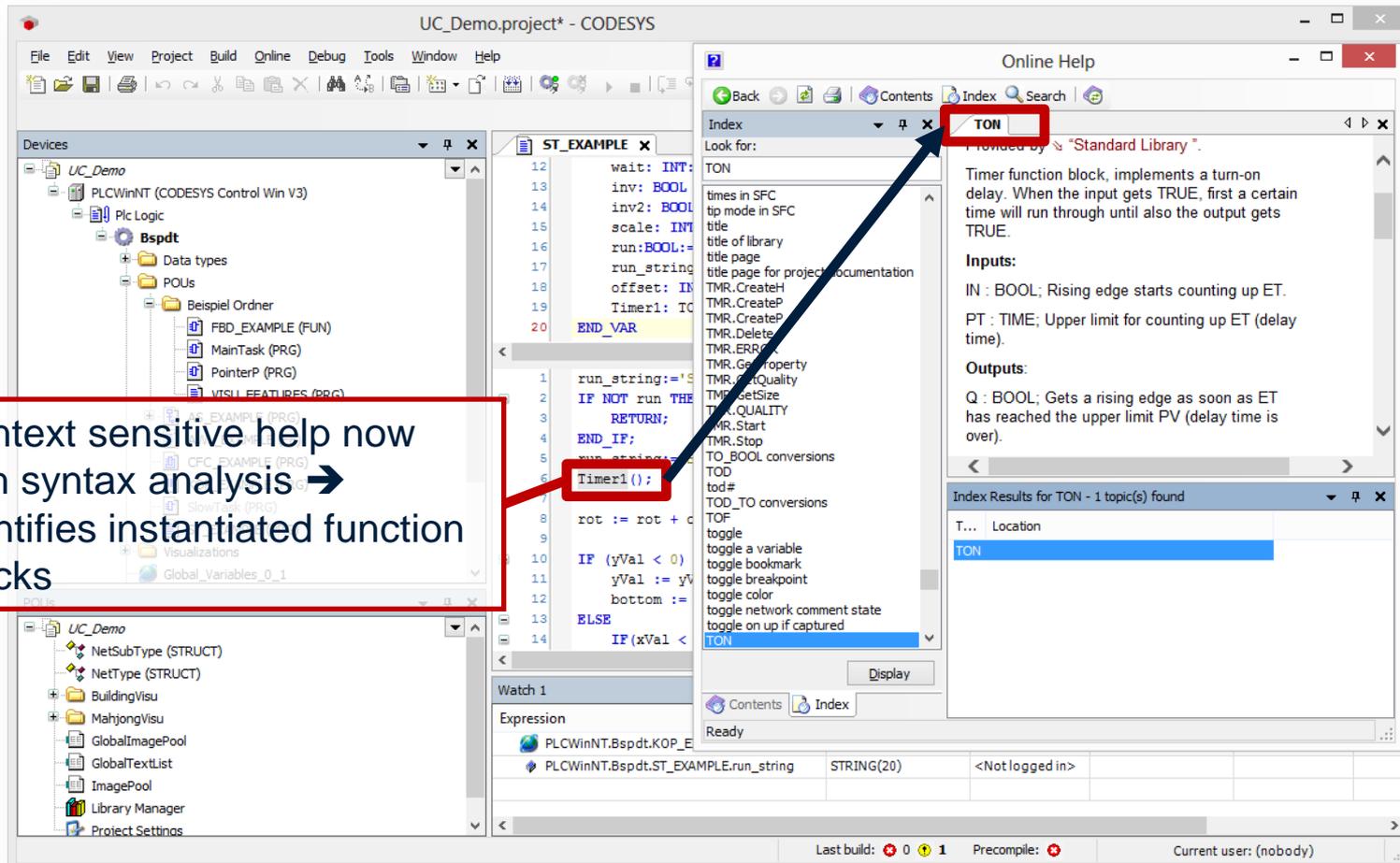
1 run_string "Start" := 'Start';
2 IF NOT run FALSE THEN
3   RETURN;
4 END_IF;
5 run_string "Start" := 'Stop';
6
7 rot[0] := rot[0] + offset[2];
8
9 IF (yVal[-250] < 0) THEN
            
```
- Watch Table (Bottom):**

Expression	Type	Value	Prepared value	Address	Cor
PLCWinNT.Bspdt.KOP_EXAMPLE.Schalter1	BOOL	FALSE			
PLCWinNT.Bspdt.ST_EXAMPLE.run_string	STRING(20)	'Start'			
- Context Menu (Right):** A context menu is open over the editor, with the option 'Close All Editors But This' highlighted in a red box. Other options include 'Select Parent Object In Navigator', 'New Horizontal Tab Group', 'New Vertical Tab Group', 'Float', 'Dock', and 'Auto Hide'.



## Simplification

- F1 more intelligent than before



Context sensitive help now with syntax analysis → identifies instantiated function blocks

UC\_Demo.project\* - CODESYS

Online Help

Index

Look for: **TON**

TON

Timer function block, implements a turn-on delay. When the input gets TRUE, first a certain time will run through until also the output gets TRUE.

**Inputs:**

IN : BOOL; Rising edge starts counting up ET.

PT : TIME; Upper limit for counting up ET (delay time).

**Outputs:**

Q : BOOL; Gets a rising edge as soon as ET has reached the upper limit PV (delay time is over).

Index Results for TON - 1 topic(s) found

T...	Location
TON	

```

12 wait: INT;
13 inv: BOOL;
14 inv2: BOOL;
15 scale: INT;
16 run: BOOL := FALSE;
17 run_string: STRING;
18 offset: INT;
19 Timer1: TON;
20 END_VAR

1 run_string := 'S';
2 IF NOT run THEN
3     RETURN;
4 END_IF;
5 run_string := yVal;
6
7 rot := rot + c;
8
9
10 IF (yVal < 0)
11     yVal := yVal * -1;
12     bottom := yVal;
13 ELSE
14     IF (xVal <
    
```

Watch 1

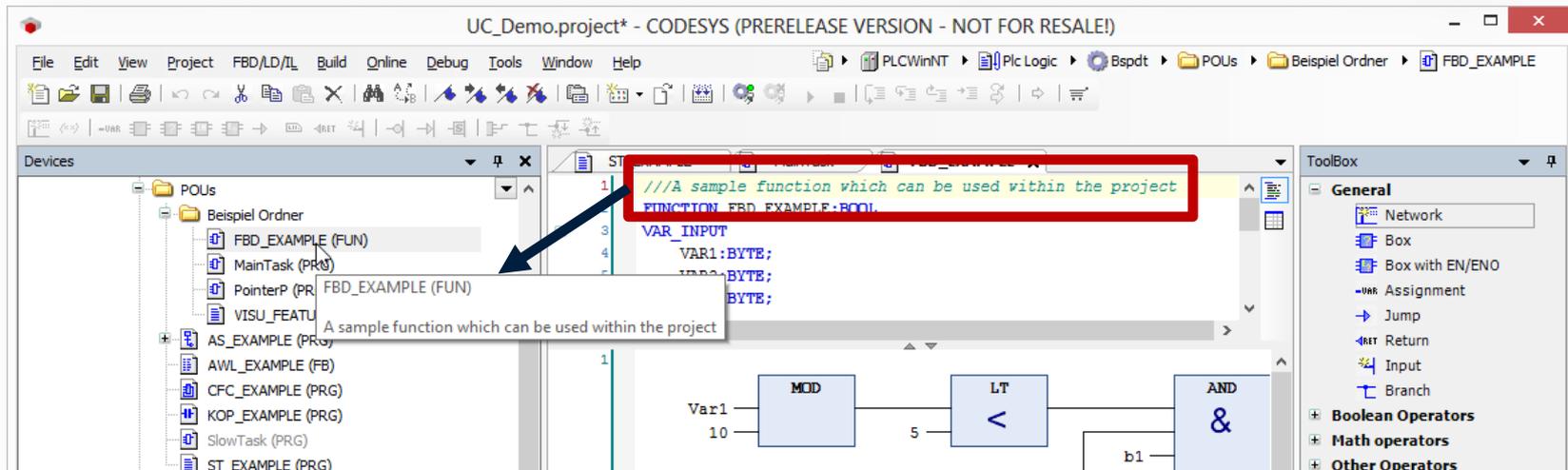
Expression

PLCWinNT.Bspdt.KOP_E	PLCWinNT.Bspdt.ST_EXAMPLE.run_string	STRING(20)	<Not logged in>

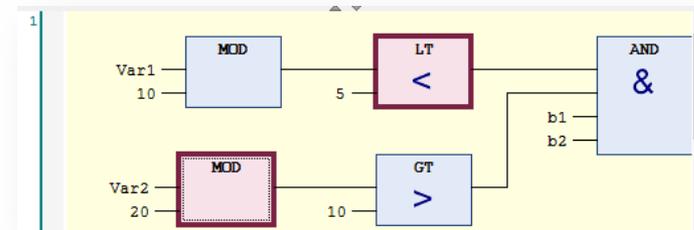
Last build: 0 0 1 Precompile: Current user: (nobody)

## Facelift

- Toggle between different editors: constant size of the toolbar
- Function block comment now in the tool tip of the device manager



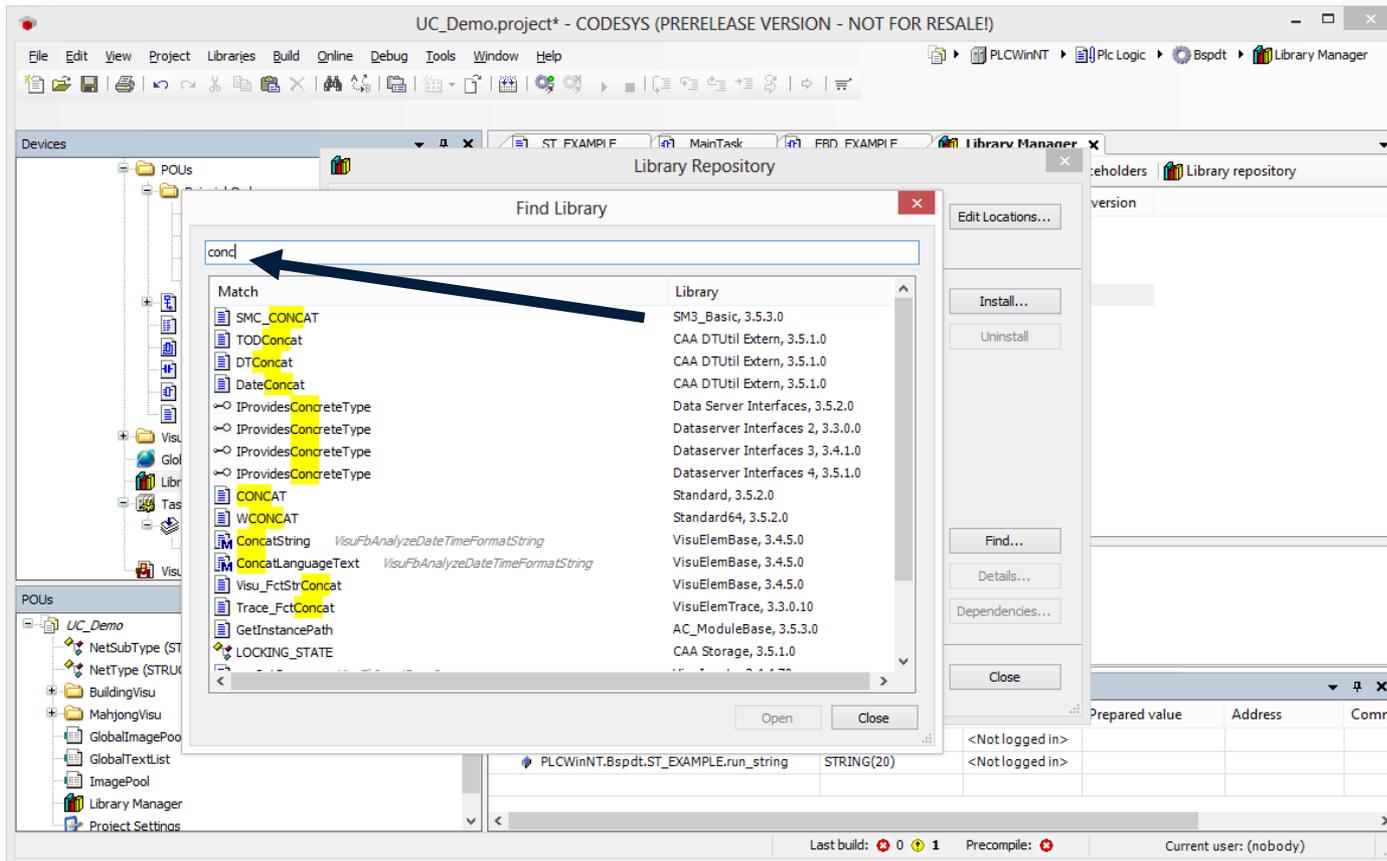
- Graphical editors: clearer selection





## Performance

- Full-text search in libraries (also comments)



The screenshot shows the CODESYS Library Manager interface. A 'Find Library' dialog box is open, displaying search results for the query 'concl'. The results are organized into two columns: 'Match' and 'Library'. The 'Match' column lists various library names, some of which are highlighted in yellow. The 'Library' column shows the corresponding library details, including version numbers. An arrow points to the search input field, which contains the text 'concl'. The background shows the main CODESYS workspace with a project tree on the left and a variable declaration table at the bottom.

Match	Library
SMC_CONCAT	SM3_Basic, 3.5.3.0
TODConcat	CAA DTUtil Extern, 3.5.1.0
DTConcat	CAA DTUtil Extern, 3.5.1.0
DateConcat	CAA DTUtil Extern, 3.5.1.0
IProvidesConcreteType	Data Server Interfaces, 3.5.2.0
IProvidesConcreteType	Dataserver Interfaces 2, 3.3.0.0
IProvidesConcreteType	Dataserver Interfaces 3, 3.4.1.0
IProvidesConcreteType	Dataserver Interfaces 4, 3.5.1.0
CONCAT	Standard, 3.5.2.0
WCONCAT	Standard64, 3.5.2.0
ConcatString	VisuElemBase, 3.4.5.0
ConcatLanguageText	VisuElemBase, 3.4.5.0
Visu_FctStrConcat	VisuElemBase, 3.4.5.0
Trace_FctConcat	VisuElemTrace, 3.3.0.10
GetInstancePath	AC_ModuleBase, 3.5.3.0
LOCKING_STATE	CAA Storage, 3.5.1.0

# Engineering: CFC „Advanced Routing Mode“



Engineering

- For routing connections: press button 
  - In the background: routing charts generated
  - No more graphical routing on scrolling/zooming
  - Considerably faster processing of large CFC POUs
  - Press button  to explicitly execute routing

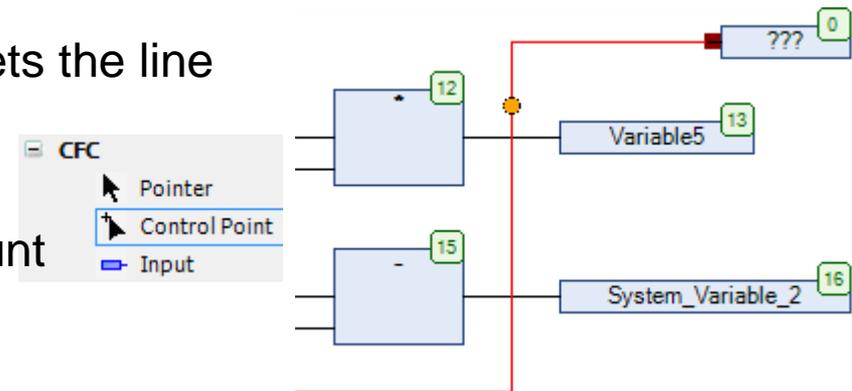
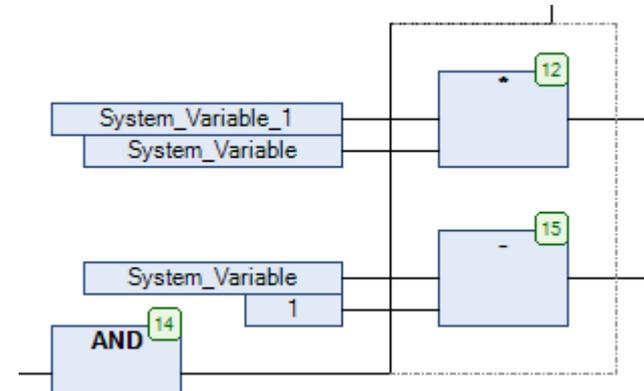


# Engineering: CFC Manual Routing of connections



Engineering

- Requirement:
  - Line is not between two connections
  - Workaround: set control points
- Temporary:
  - Simply drag a line
  - New start of the automatic routing resets the line
- Persistent:
  - Set control points
    - ➔ Auto-Routing takes them into account
- Managing the control points
  - Individual delete
  - Indication of control points when selecting a line or on mouse-over
  - Delete all control points at the same time

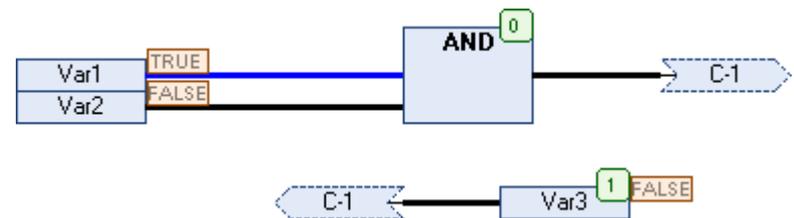
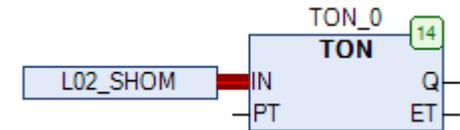


# Engineering: Further CFC Improvements



Engineering

- Connecting Pins:
  - Connection only exists if displayed explicitly
  - Auto-Connect option under Tools/Options/CFC Editor
- Names for instances are suggested automatically
  - Faster declaration of FB instances
- Monitoring
  - of Boolean values now blue/black (as usual 😊)
  - of values at non-connected pins





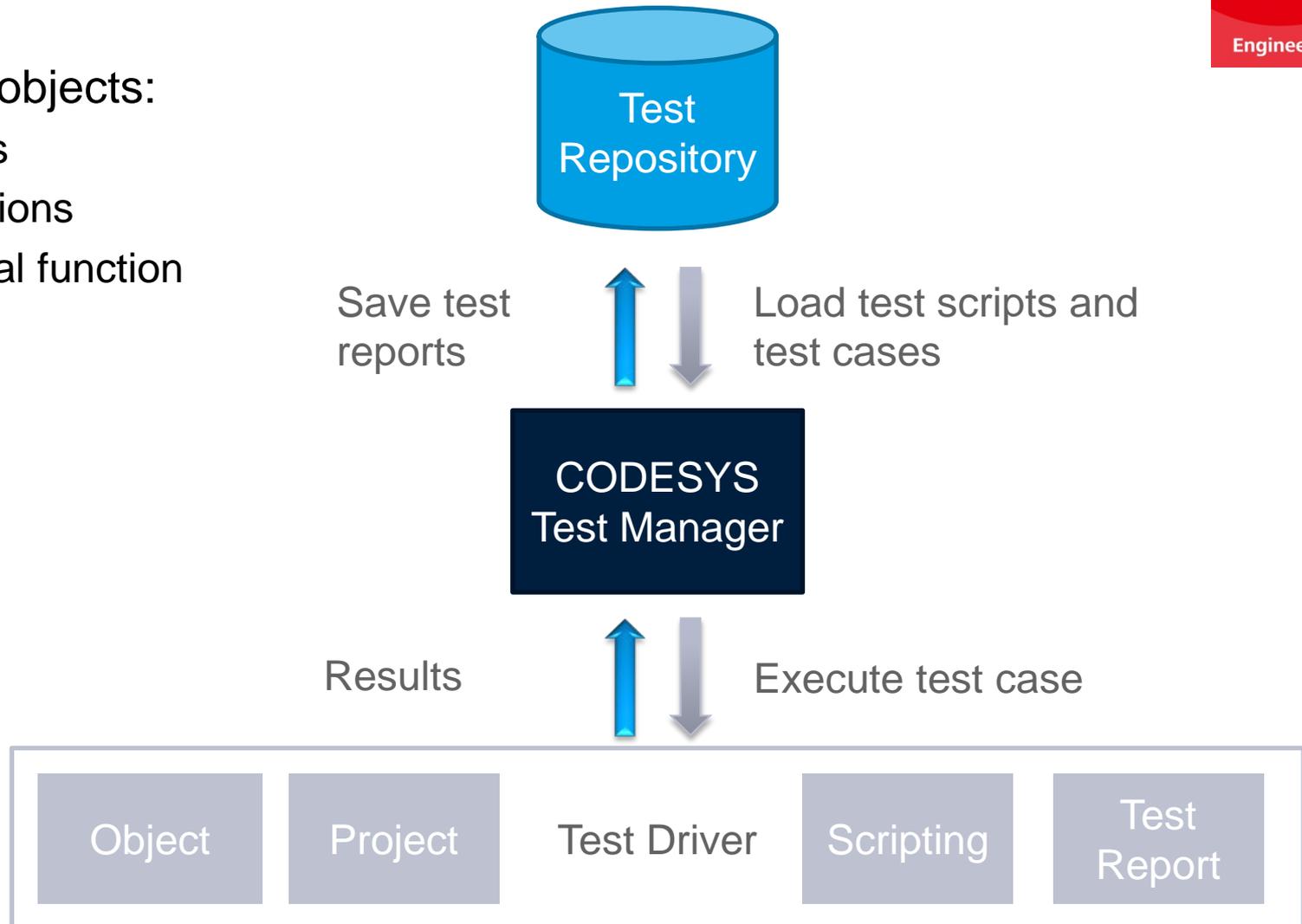
- The CODESYS Test Manager
  - Completely integrated in CODESYS
  - For creation, execution and assessment of test scripts
- Functionality
  - Test scripts are saved in a joint test repository.
  - A test script consists of test cases which themselves consist of test actions.
  - The test actions are executed by the test driver.
  - The CODESYS Test Manager is an interpreter for test scripts.
  - The Test Manager provides dialogues to allow for a comfortable entry of test scripts.
  - The results of the test script execution (test cycles) are clearly laid out in a test report.

# Engineering: Preview CODESYS Test Manager



Engineering

- Testable objects:
  - Libraries
  - Applications
  - Individual function blocks





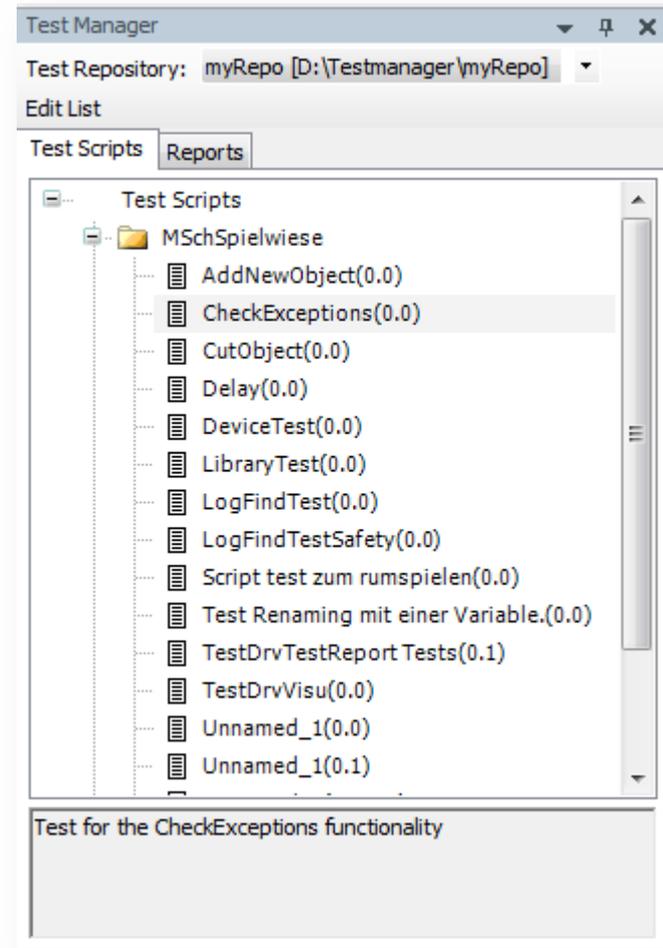
- Install and start Test Manager
    - Install and license Test Manager with the Package Manager – most easily from the CODESYS Store.
    - Start Test Manager under “Tools” - “Test Manager”
- At the first start, a repository for test scripts and reports will be created automatically.

# Engineering: Preview CODESYS Test Manager



Engineering

- Test Repository
  - File path for test scripts and test reports
  - Project spanning
  - Structuring through folders (categories)
  - Based on a file system



# Engineering: Preview CODESYS Test Manager



Engineering

## ■ Unit Tests

### Configuration

IecUnitTest

Title: CodeGeneratorTest x86

Device read timeout (ms): 5000

Libraries to test:

Name	Version	Company
CodeGeneratorTest	*	3S - Smart Software Solutions GmbH

Excluded categories:

IecRounding\_REAL  
IecRounding\_LREAL

Excluded functions:

CHECKDIVREAL\_VAR  
CHECKBOUNDS\_TEST  
CHECKDIV\_LINT  
CHECKDIV

Single application mode

### Test code

```

Start Page  Library Manager  CheckBounds_Test_Local
1  {attribute 'test'}
2  {attribute 'testcategory'='ImplicitChecks'}
3  PROGRAM CheckBounds_Test_Local
4  VAR [22 lines]
27 END_VAR
28 VAR_INPUT
29     xExecute : BOOL;
30     xAbort : BOOL;
31 END_VAR
32 VAR_OUTPUT
33     xDone : BOOL;
34     xBusy : BOOL;
35     xError : BOOL;
36     xAborted : BOOL;
37 END_VAR

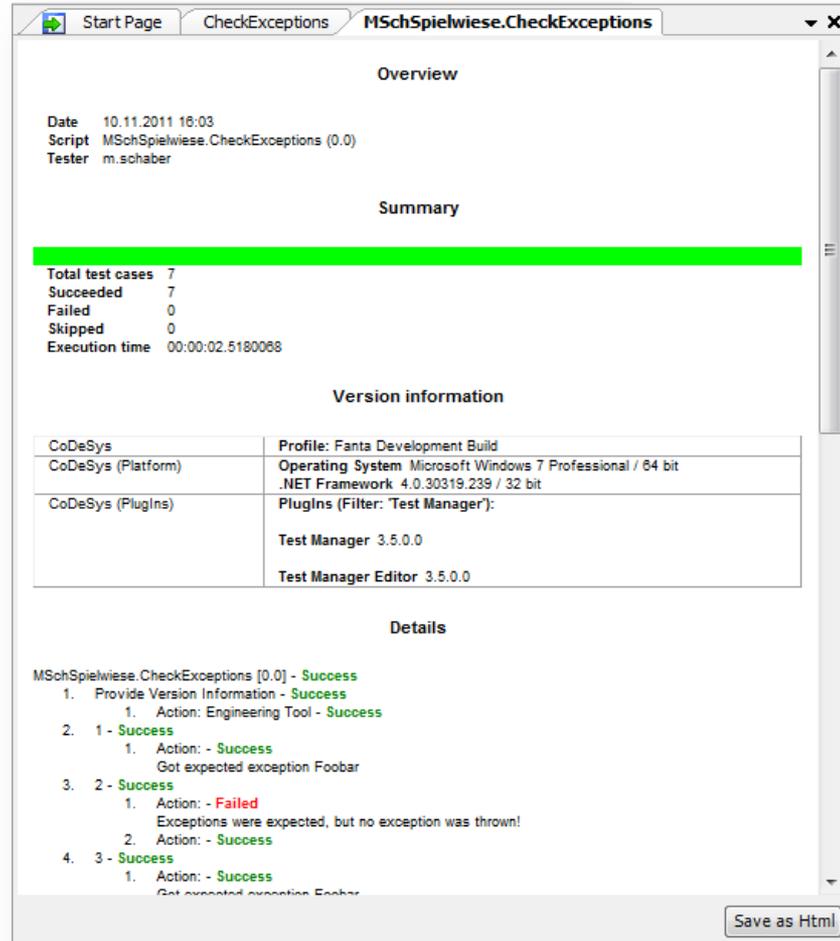
1  arr1[index1_lower]:=int1;
2  error1:=arr1[-2] <> int1;
3
4  arr1[index1]:=int2;
5  error2:=arr1[1] <> int2;
6
7  arr1[index1_higher]:=int3;
8  error3:=arr1[2] <> int3;
9
  
```

# Engineering: Preview CODESYS Test Manager



Engineering

- Test Report
  - Content:
    - When/Who/What
    - Version information
    - Test evaluation at a glance and in detail
  - XML format
    - For automatic evaluation
  - Exportable as HTML



The screenshot displays the 'MSchSpielwiese.CheckExceptions' test report window. It includes an 'Overview' section with metadata, a 'Summary' section with a green progress bar and test statistics, a 'Version information' table, and a 'Details' section with a hierarchical list of test actions and their results.

**Overview**

Date 10.11.2011 18:03  
 Script MSchSpielwiese.CheckExceptions (0.0)  
 Tester m.schaber

**Summary**

Total test cases 7  
 Succeeded 7  
 Failed 0  
 Skipped 0  
 Execution time 00:00:02.5180088

**Version information**

CoDeSys	Profile: Fanta Development Build
CoDeSys (Platform)	Operating System Microsoft Windows 7 Professional / 64 bit .NET Framework 4.0.30319.239 / 32 bit
CoDeSys (Plugins)	Plugins (Filter: 'Test Manager'): Test Manager 3.5.0.0 Test Manager Editor 3.5.0.0

**Details**

MSchSpielwiese.CheckExceptions [0.0] - **Success**

1. Provide Version Information - **Success**
  1. Action: Engineering Tool - **Success**
2. 1 - **Success**
  1. Action: - **Success**  
Got expected exception Foobar
3. 2 - **Success**
  1. Action: - **Failed**  
Exceptions were expected, but no exception was thrown!
  2. Action: - **Success**
4. 3 - **Success**
  1. Action: - **Success**  
Got expected exception Foobar

Save as Html



- The CODESYS Test Manager allows for the automatic execution of complex test procedures.
- The CODESYS Test Manager was designed
  - for application developers
    - for testing their FBs, libraries and applications
  - for device manufacturers
    - for testing their devices
    - for testing their libraries
  - for 3S-Smart Software Solutions
    - for automated CODESYS testing
      - in use for more than 5 years
      - approx. 50.000 test cases per Service Pack



# Engineering: Chinese Identifiers



Engineering

- For variables and POU's
- NOT for
  - Symbol configuration
  - Application information
  - Wherever a variable name appears as an IEC string



- Display of executed lines without variables

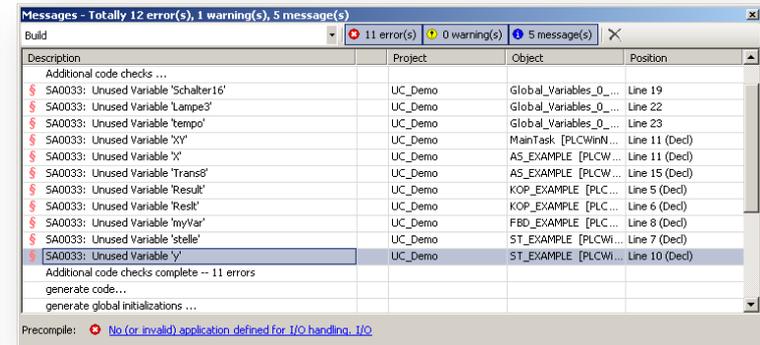
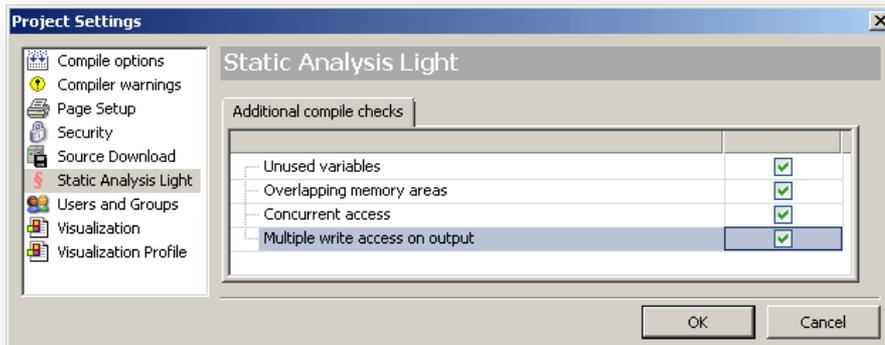
```

1  w 140 := w 139 + 1;
2
3  WHILE ((w 140 MOD 10) = 0) DO
4    EXIT;
5    Test FALSE := TRUE;
6  END_WHILE
  
```



- Checksum to identify retain data
- Up to now, data guid has been used
- Advantage:  
a boot project will more often match the saved retains

- In the scope of delivery of CODESYS V3.5 SP3
- Includes tests as in CODESYS V2.3:
  - Unused variables
  - Overlapping memory areas
  - Concurrent access
  - Multiple write access on output
- Configured code analysis is executed automatically during code generation.





## Engineering: New CPU Platform

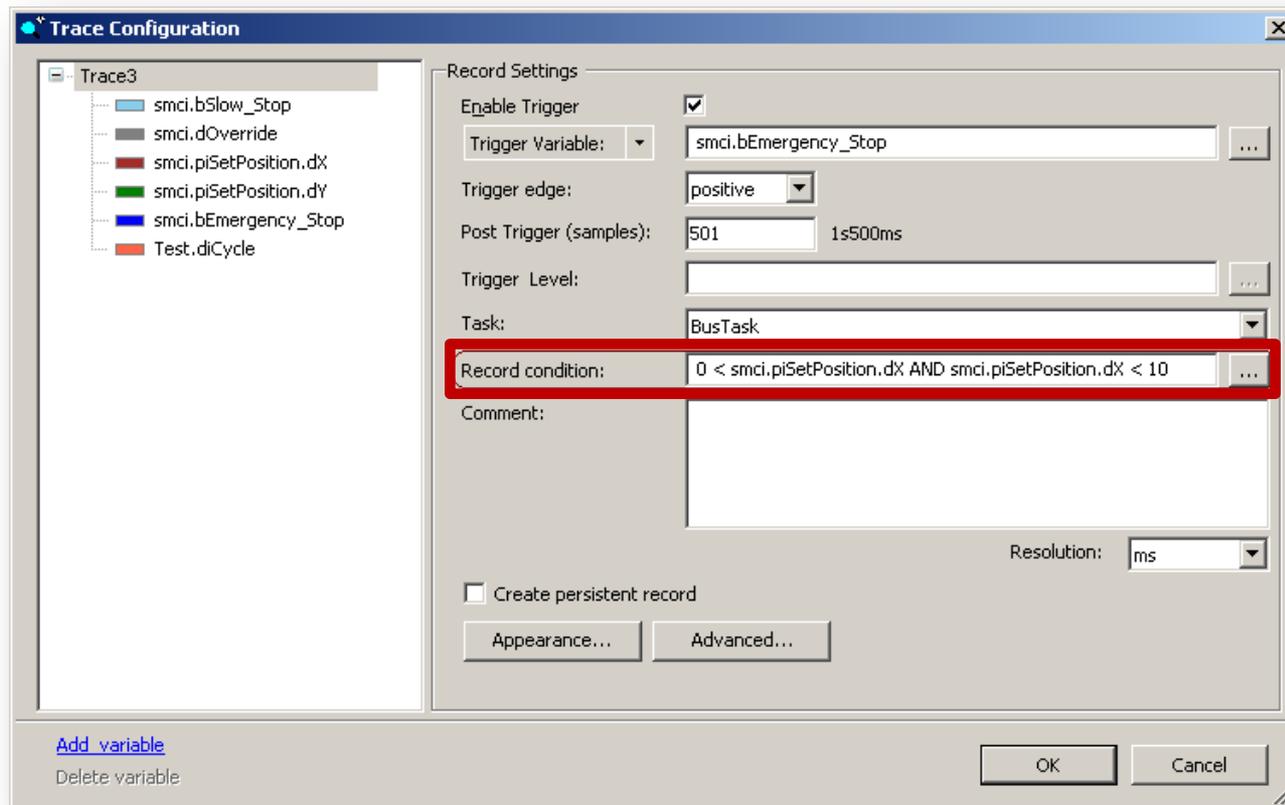


Engineering

- New code generator for the Renesas RX processor family (RX200 / RX 600)



- Boolean expression within the record condition
- Requires new component (monitoring component) within the runtime system (RTS)





# Engineering: Online Change Optimization



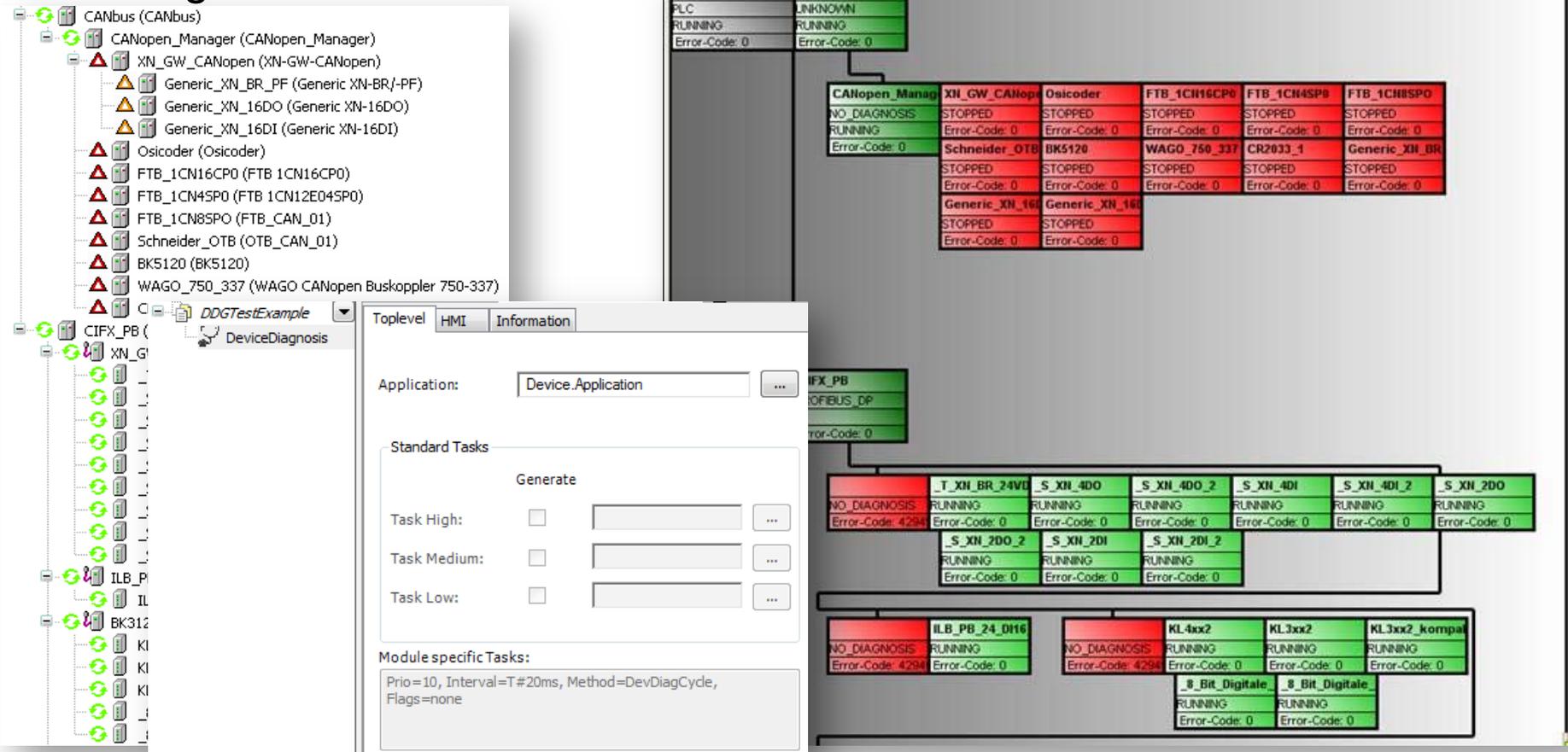
Engineering

- Online Change now faster after the following changes:
  - Code changes
  - Local variables in functions, methods, programs
  - New global variables
  - Call of new functions
  - Changes of initial values
- Faster generation of boot projects after online change (since SP 2)
- Code generation in general 5 – 10% faster

# CODESYS Application Composer: Diagnosis Generator



- Automatically generated diagnosis visualization for the fieldbus configuration



The screenshot displays the CODESYS Application Composer interface. On the left is a project tree showing a CANbus configuration with various modules like CANopen\_Manager, XN\_GW\_CANopen, and several FTB (Fieldbus Terminal Block) units. In the center, the 'DeviceDiagnosis' dialog box is open, showing configuration options for the application and task priorities. On the right, a detailed diagnosis visualization is shown, consisting of several tables. Each table represents a device or module, with columns for its name and status. The status is color-coded: green for 'RUNNING' and red for 'STOPPED'. Error codes are also displayed for each device.

Device	CANbus
PLC	UNKNOWN
RUNNING	RUNNING
Error-Code: 0	Error-Code: 0

CANopen_Manag	XN_GW_CANopen	Oscocoder	FTB_1CN16CP0	FTB_1CN4SP0	FTB_1CN8SPO
NO_DIAGNOSIS	STOPPED	STOPPED	STOPPED	STOPPED	STOPPED
RUNNING	Error-Code: 0				
Error-Code: 0	Schneider_OTB	BK5120	WAGO_750_337	CR2033_1	Generic_XN_BR
STOPPED	STOPPED	STOPPED	STOPPED	STOPPED	STOPPED
Error-Code: 0					
Generic_XN_16	Generic_XN_16				
STOPPED	STOPPED				
Error-Code: 0	Error-Code: 0				

	_T_XN_BR_24V0	_S_XN_4D0	_S_XN_4D0_2	_S_XN_4D1	_S_XN_4D1_2	_S_XN_2D0
NO_DIAGNOSIS	RUNNING	RUNNING	RUNNING	RUNNING	RUNNING	RUNNING
Error-Code: 4294	Error-Code: 0					
	_S_XN_2D0_2	_S_XN_2D1	_S_XN_2D1_2			
	RUNNING	RUNNING	RUNNING			
	Error-Code: 0	Error-Code: 0	Error-Code: 0			

	ILB_PB_24_016	KL4xx2	KL3xx2	KL3xx2_kormpa
NO_DIAGNOSIS	RUNNING	RUNNING	RUNNING	RUNNING
Error-Code: 4294	Error-Code: 0	Error-Code: 4294	Error-Code: 0	Error-Code: 0
		_8_Bit_Digitale	_8_Bit_Digitale	
		RUNNING	RUNNING	
		Error-Code: 0	Error-Code: 0	

1

Engineering



Engineering

2

Motion+CNC



Motion + CNC

3

Visualization



Visualization

4

Fieldbus

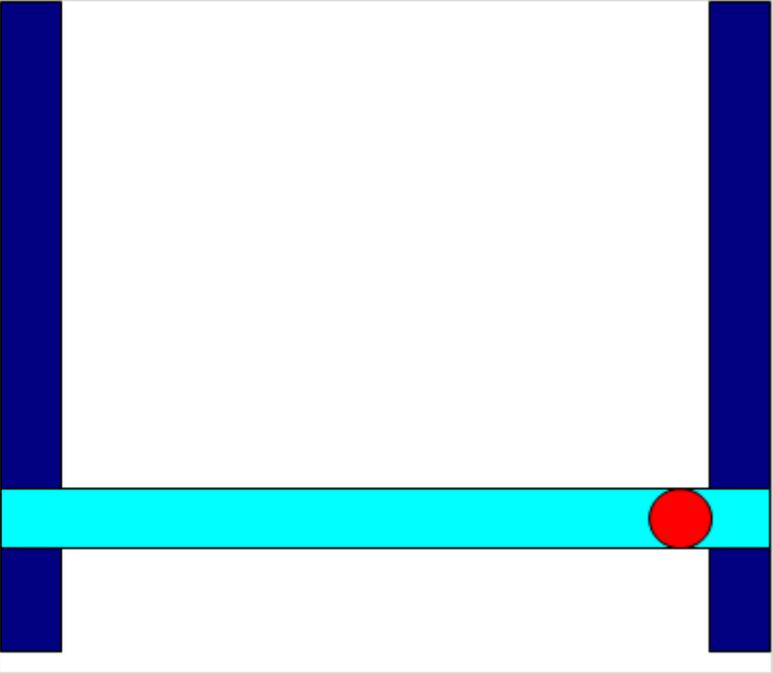


Fieldbus

- CNC interpolator that can drive forwards and backwards:  
 Reversing now possible even if not the complete path fits into the queue.

**SMC\_Interpolator2Dir**  
Instance: smd

bExecute	<input type="checkbox"/>	bEndOfPath	<input checked="" type="checkbox"/>								
bSlow_Stop	<input type="checkbox"/>	bBusy	<input checked="" type="checkbox"/>								
bEmergency_Stop	<input type="checkbox"/>	bError	<input checked="" type="checkbox"/>								
bWaitAtNextStop	<input type="checkbox"/>	wErrorID	0								
<b>dOverride</b>	<input type="text" value="-1.000000"/>	iStatus	IPO_CONST								
ivElMode	<input type="text" value="OVERRIDE"/>	bWorking	<input checked="" type="checkbox"/>								
dwIpoTime	<input type="text" value="3000 μs"/>	iActObjectSourceNo	12								
dLastWayPos	<input type="text" value="0.000000"/>	dVel	<input type="text" value="20.000000"/>								
bAbort	<input type="checkbox"/>	iLastSwitch	0								
bSingleStep	<input type="checkbox"/>	dwSwitches	<table border="1" style="width: 40px; height: 20px;"><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>								
bAcknM	<input type="checkbox"/>	dWayPos	<input type="text" value="-0.060000"/>								
bQuick_Stop	<input type="checkbox"/>	nDirection	IPO_negativ								
dQuickDeceleration	<input type="text" value="0.000000"/>	wM	0								
dJerkMax	<input type="text" value="100.000000"/>										
dQuickStopJerk	<input type="text" value="0.000000"/>										
bStartAtEnd	<input type="checkbox"/>										





- Lexium32i drive now supported.

Information:

 **Name:** Lexium32I\_SoftMotion  
**Vendor:** Schneider Electric  
**Categories:** Slave  
**Version:** 3.5.3.0  
**Order Number:**  
**Description:** Lexium 32 Integrated Servo Drive and BMH synchronous motor in one unit  
 110 ... 480 VAC  
 single / three phase  
 600W ...2,2kW  
 Size 70 and Size 100 motor flange



**1**

## Engineering



Engineering

**2**

## Motion+CNC



Motion + CNC

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Visualization

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## Fieldbus



Fieldbus



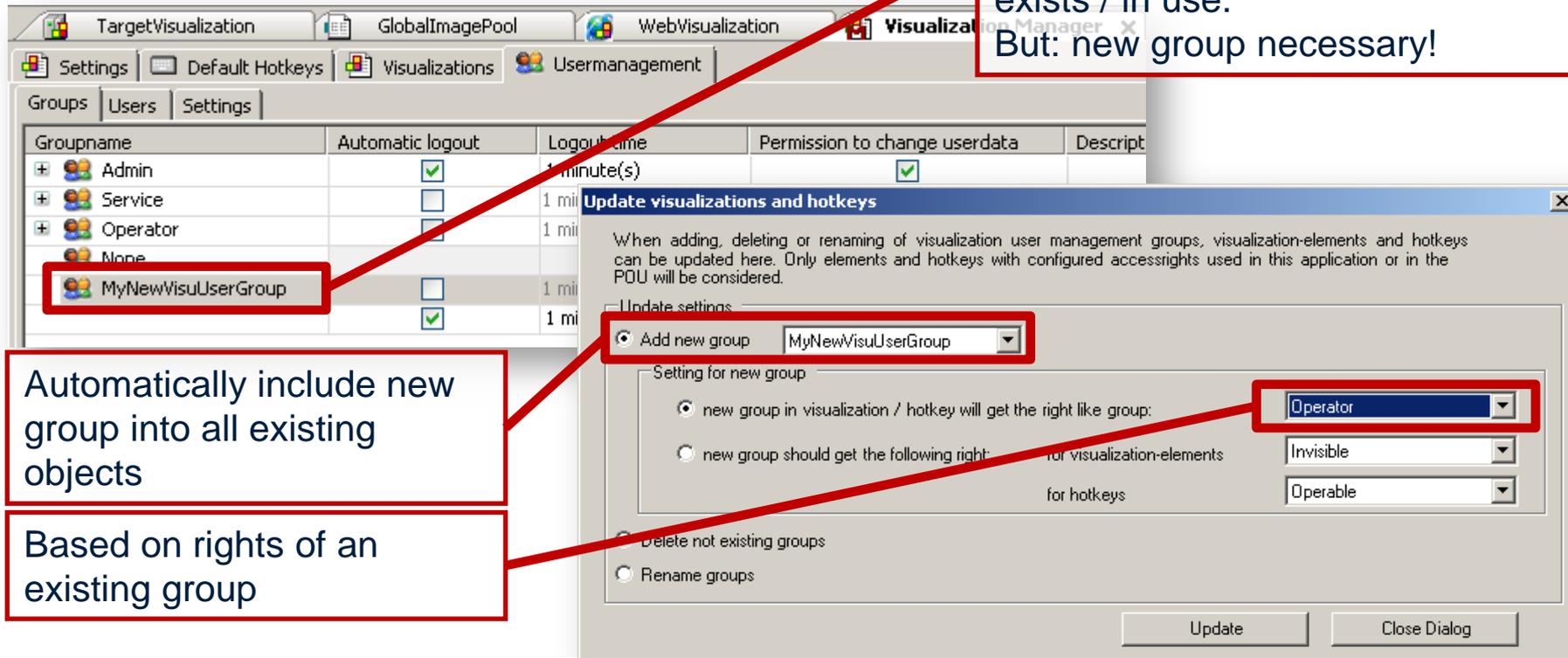
- Visualization User Management
- SVG graphics
- IEC interface to Alarm Management
- Editor improvements
- Improvements for Target Visualization under Windows CE

# Visualization: User Management



- **User management now released**  
See „Features and Improvements V3.5 SP2”
- **New dialog:**  
“Update visualizations and hotkeys”

Use case:  
User Management for  
visualization objects already  
exists / in use.  
But: new group necessary!



Groupname	Automatic logout	Logout time	Permission to change userdata	Descript
Admin	<input checked="" type="checkbox"/>	1 minute(s)	<input checked="" type="checkbox"/>	
Service	<input type="checkbox"/>	1 mi		
Operator	<input type="checkbox"/>	1 mi		
None	<input type="checkbox"/>			
MyNewVisuUserGroup	<input type="checkbox"/>	1 mi		
	<input checked="" type="checkbox"/>	1 mi		

**Update visualizations and hotkeys**

When adding, deleting or renaming of visualization user management groups, visualization-elements and hotkeys can be updated here. Only elements and hotkeys with configured accessrights used in this application or in the POU will be considered.

Update settings:

- Add new group: MyNewVisuUserGroup
- Setting for new group:
  - new group in visualization / hotkey will get the right like group: Operator
  - new group should get the following right:
    - for visualization-elements: Invisible
    - for hotkeys: Operable
- Delete not existing groups
- Rename groups

Buttons: Update, Close Dialog

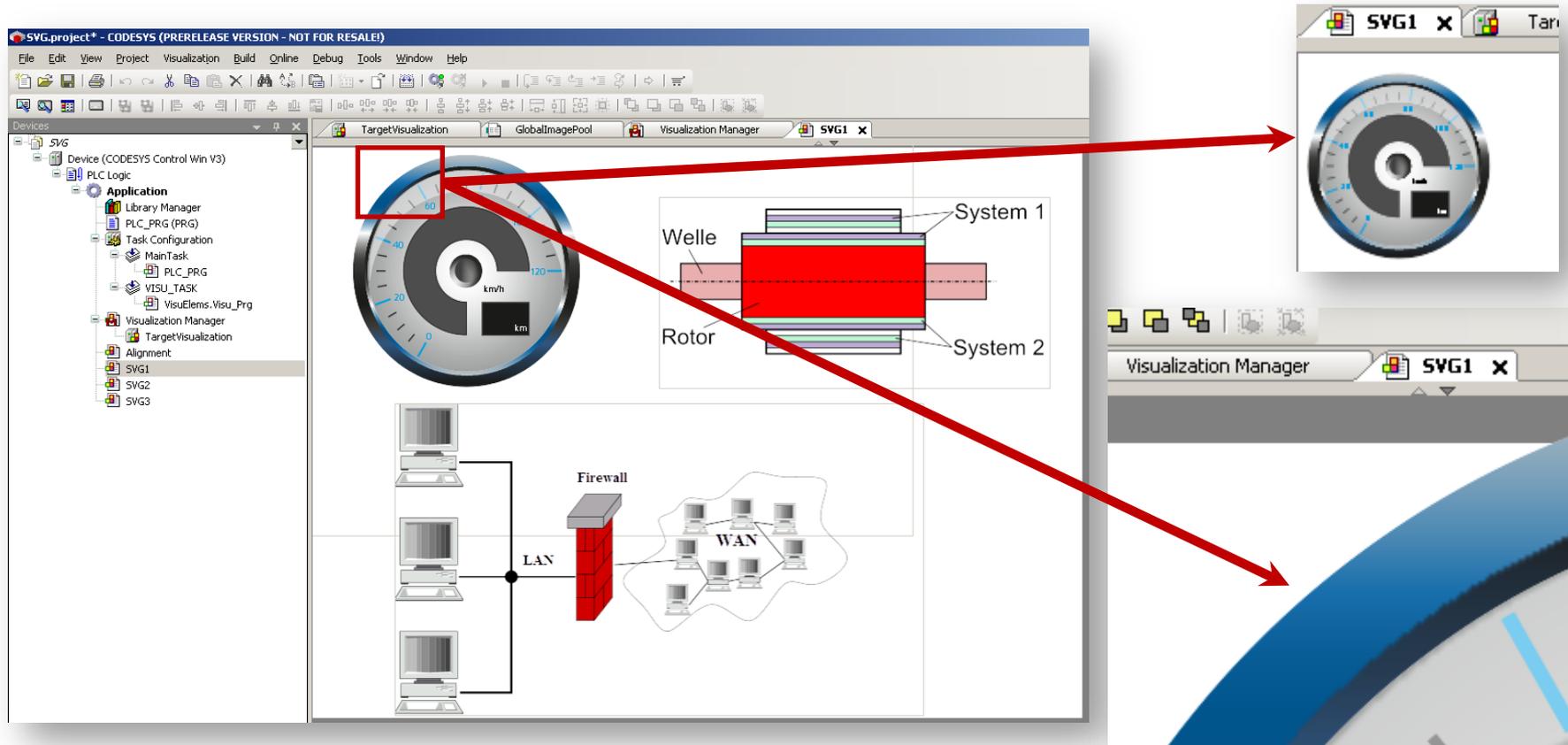
Automatically include new group into all existing objects

Based on rights of an existing group

# Visualization: Support of SVG graphics



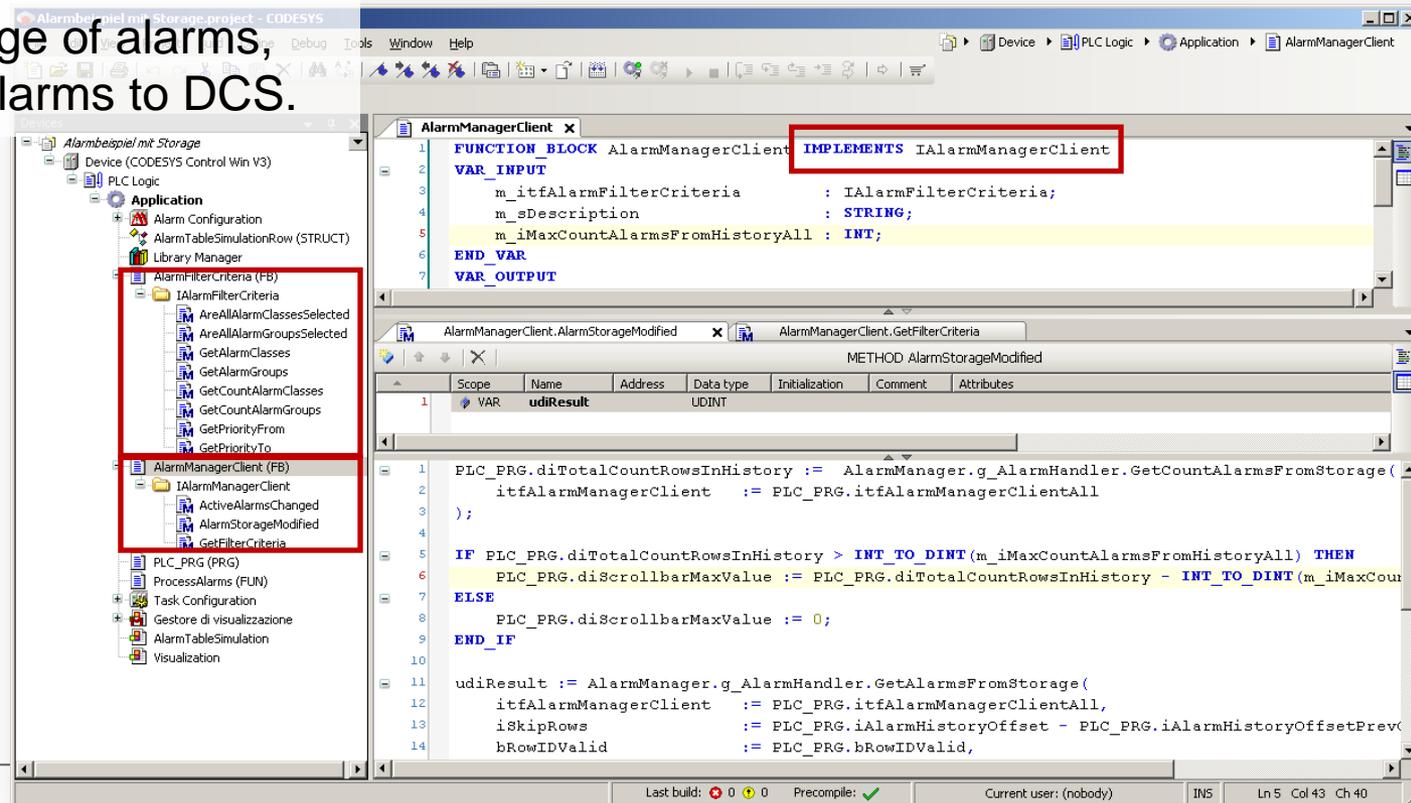
- Import of scalable vector graphics (SVG files)
- Graphics may now be scaled without quality loss



# Visualization: Alarm Management



- Open IEC interface by extension of AlarmManager.library:
  - new interfaces *iAlarmManagerClient* und *iAlarmFilterCriteria*
    - Active and historical alarms can be further processed by the application code
    - Typical use cases:
      - Archival storage of alarms,
      - handover of alarms to DCS.



The screenshot displays the CODESYS IDE interface. On the left, the Project Explorer shows the 'AlarmManagerClient' library structure, with 'iAlarmManagerClient' and 'iAlarmFilterCriteria' highlighted in red. The main editor shows the implementation of the 'AlarmManagerClient' library, which implements the 'iAlarmManagerClient' interface. The code includes a function block definition and a method implementation for 'AlarmStorageModified'.

```

1 FUNCTION_BLOCK AlarmManagerClient IMPLEMENTS IAlarmManagerClient
2 VAR_INPUT
3   m_itfAlarmFilterCriteria : IAlarmFilterCriteria;
4   m_sDescription           : STRING;
5   m_iMaxCountAlarmsFromHistoryAll : INT;
6 END_VAR
7 VAR_OUTPUT
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```

The 'AlarmStorageModified' method implementation is shown below:

```

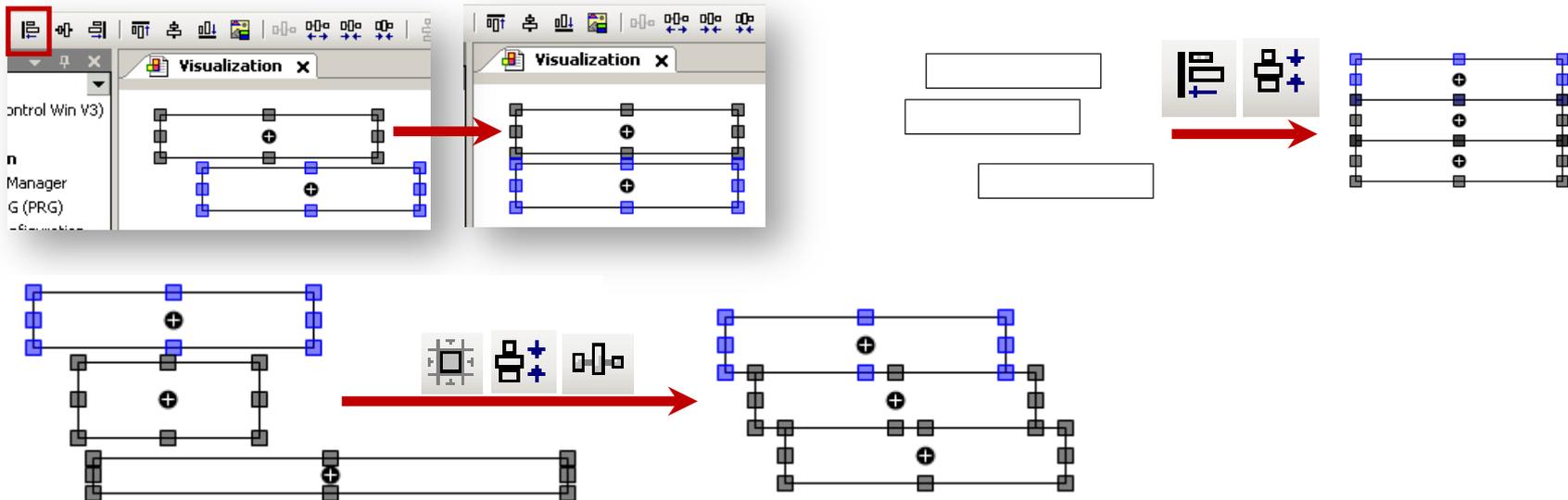
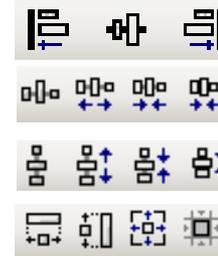
1 Scope
2 Name
3 Address
4 Data type
5 Initialization
6 Comment
7 Attributes
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```

# Visualization: Editor Improvements



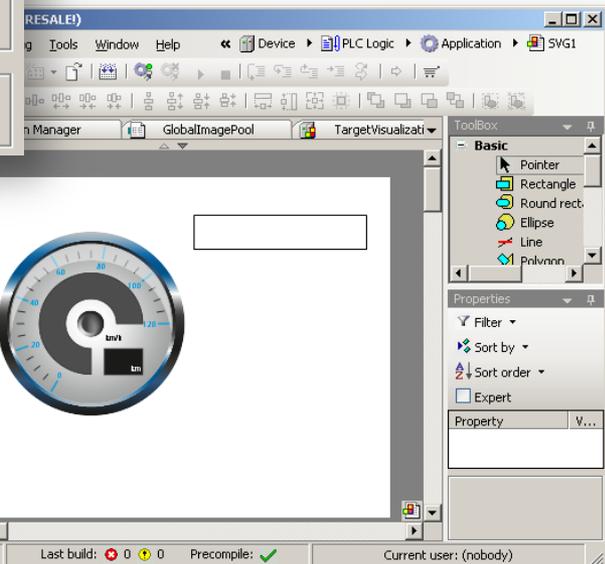
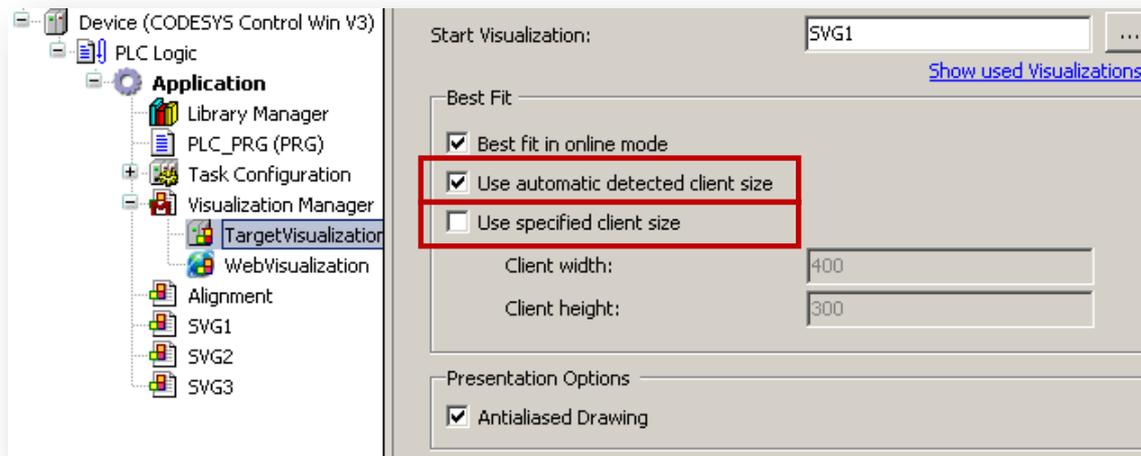
- Additional alignment commands for the arrangement of multiple elements
  - Left- / right-aligned / centered
  - Adapt / arrange / delete horizontal distances
  - Adapt / arrange / delete vertical distances
  - Adapt element dimensions / size to grid
- Examples:



# Visualization: Editor Improvements



## ■ Configuration of the display dimensions on the device



- Dimensions may be determined by the device description or by the user
- Specific dimensions for CODESYS WebVisu



## Visualization: Further Improvements



- Windows CE target visualization:
  - Support of graphics format png (portable network graphics)
  - Support of color gradients
  - An update of the runtime is requested in order to obtain these improvements.

1

Engineering



Engineering

2

Motion+CNC



Motion + CNC

3

Visualization



Visualization

4

Fieldbus



Fieldbus



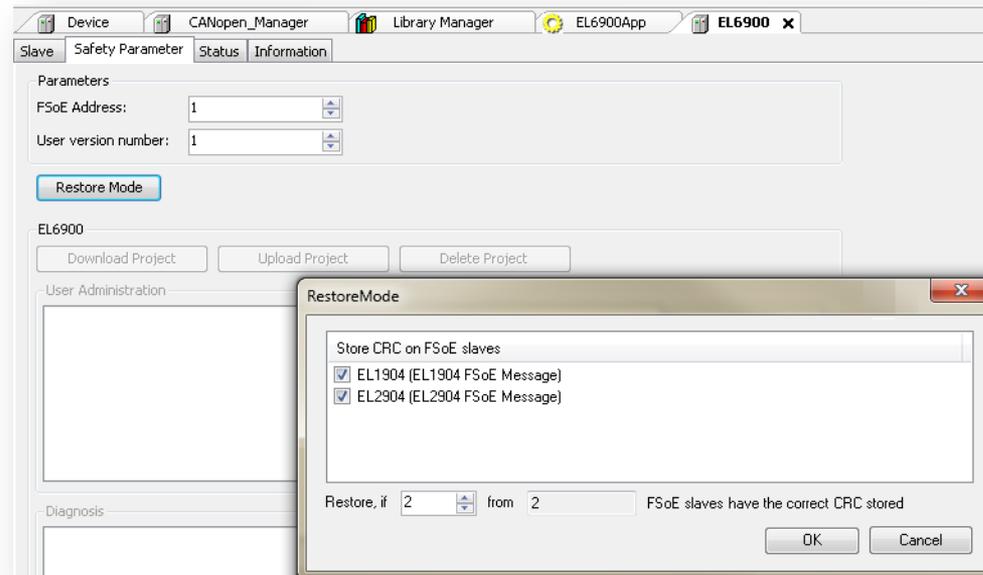
- PROFIBUS / PROFINET:  
Standardized function blocks for an acyclic PROFIBUS and PROFINET communication



- IoDrvSercosIII: Most recent CoSeMa version supported
  - Latest Automata Sercos fieldbus card with FPGA version 4 now supported by IoDrvSercos3.library



- EtherCAT Safety:
  - The Safety project for the EL6900 can now be saved as a separated file. In case of a replacement of the module, the project will automatically be downloaded to the new module.



- EtherCAT Safety: Monitoring (EtherCAT Stack)
  - Inputs and outputs of specific EL6900 function blocks are now displayed.

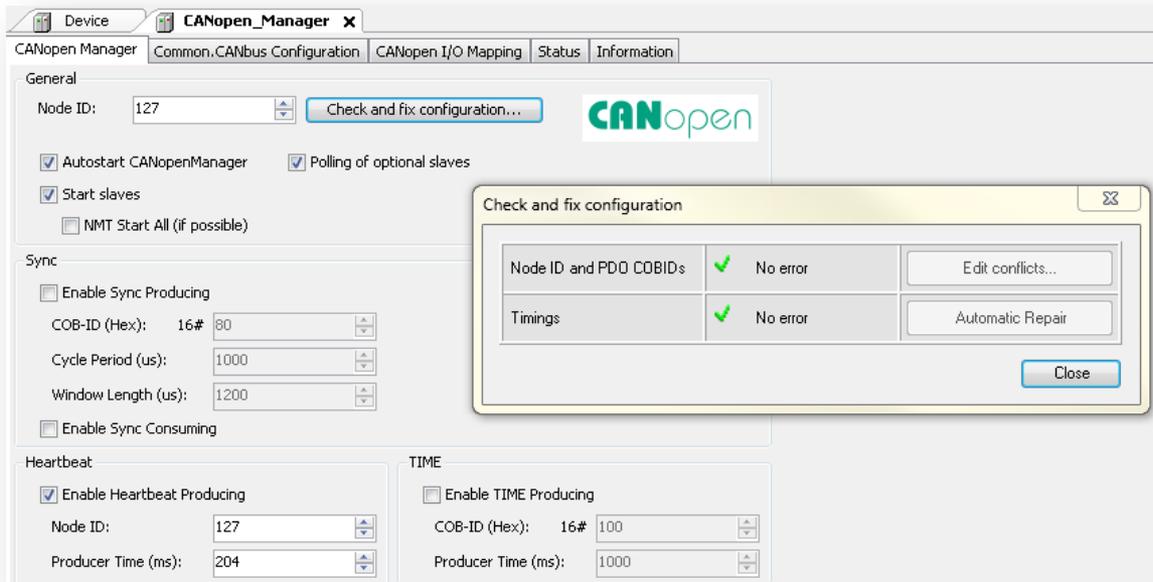


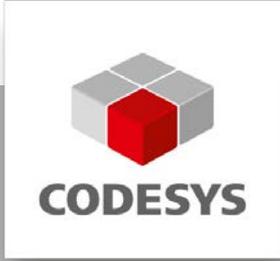
- Device Editor: Sortation in the parameter list
  - By clicking in the head columns parameters, the generic device editor will be sorted.
  - ➔ Easier searching for certain parameters

Parameter	Type	Value	Default Value	Unit	Description
DC sync1 enable	BOOL	0	0		DC sync1 enable
DC sync0 enable	BOOL	0	0		DC sync0 enable
DC enable	BOOL	0	0		DC enable
CheckProductID	BOOL	TRUE	TRUE		CheckProductID
CheckVendorID	BOOL	TRUE	TRUE		CheckVendorID
Timeout Init to Preop	DWORD	3000	3000		Timeout Init to Preop
DC sync1 cycletime	DWORD	4000	0		DC sync1 cycletime
Timeout Preop to Safeop, SafeOp to Op	DWORD	10000	10000		Timeout Preop to Safeop, SafeOp to Op
Timeout SDO Access	DWORD	1000	1000		Timeout SDO Access
DC sync0 cycletime	DWORD	4000	0		DC sync0 cycletime
Number of TxPDOs of the Slave	DWORD	0	0		Number of TxPDOs of the Slave
Number of RxPDOs of the Slave	DWORD	0	0		Number of RxPDOs of the Slave
Number of FMMUs of the Slave	DWORD	0	0		Number of FMMUs of the Slave
Number of SyncManagers of the Slave	DWORD	0	0		Number of SyncManagers of the Slave
AutoIncr Address of the Slave	DWORD	0	0		AutoIncr Address of the Slave
Physical Address of the Slave	DWORD	1001	0		Physical Address of the Slave
Serialnumber of the Slave	DWORD	0	0		Serialnumber of the Slave
Revision Number of the Slave	DWORD	0	0		Revision Number of the Slave
Product Code of the Slave	DWORD	72100946	72100946		Product Code of the Slave
Vendor Id of the Slave	DWORD	2	2		Vendor Id of the Slave
Number of Identity Parameters	DWORD	4	4		Number of Identity Parameters
Timeout Back to SafeOp	DWORD	200	200		Timeout Back to SafeOp
Timeout Back to Init	DWORD	5000	5000		Timeout Back to Init
StationAlias	WORD	0			



- CANopen: Heartbeat / node guarding
  - „Check and Fix“ extended in the CANopen Manager. Now error of task cycle times are displayed, too (e.g. if the node guarding time is not a multiple of the task cycle time).
  - Now „AutoFix“ automatically eliminates all problems. In order to do so, time values will be rounded to the upper or lower values.





Inspiring Automation Solutions

Thank you for your attention.